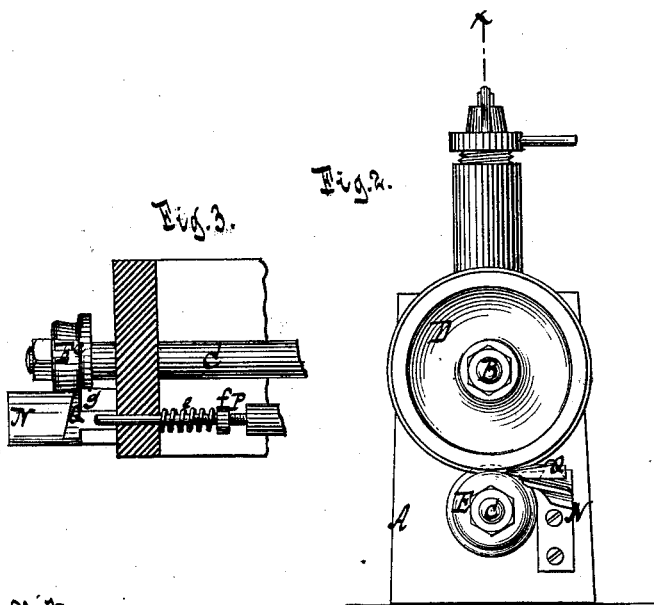
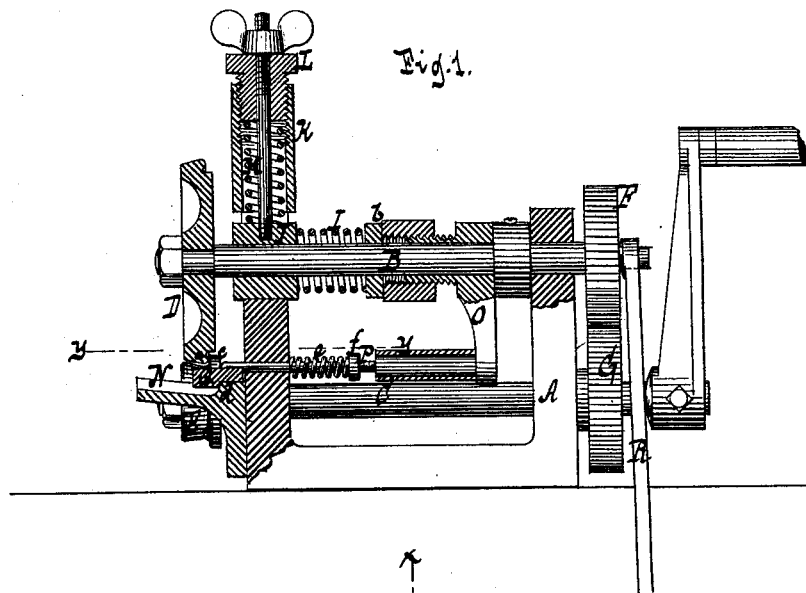


# Machine for Producing Brims on Sweat-Bands for Hats and Caps.

No. 220,570.

**Patented Oct. 14, 1879.**



Witnesses  
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William Miller

Inventor  
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# UNITED STATES PATENT OFFICE.

THOMAS W. BRACHER, OF NEW YORK, N. Y.

## IMPROVEMENT IN MACHINES FOR PRODUCING BRIMS ON SWEAT-BANDS FOR HATS AND CAPS.

Specification forming part of Letters Patent No. **220,570**, dated October 14, 1879; application filed July 2, 1879.

*To all whom it may concern:*

Be it known that I, THOMAS W. BRACHER, of the city, county, and State of New York, have invented a new and useful Improvement in Machines for Producing Brims on Sweat-Bands for Hats and Caps, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section in the plane  $xx$ , Fig. 2. Fig. 2 is a front view. Fig. 3 is a horizontal section in the plane  $yy$ , Fig. 1.

Similar letters indicate corresponding parts.

This invention relates to certain improvements on that class of machines for producing brims on sweat-bands for hats and caps which I have described in my Letters Patent No. 210,985, granted to me December 17, 1878, and in which two wheels are employed, which are subjected to the action of two springs, one of which serves to compress the faces of the wheels in a direction at right angles to their shafts, and the other to compress them in a direction parallel to their shafts.

My present improvement consists in the combination, with two wheels which are adapted to receive the bent edge of a sweat-band between them and to stretch the same, of a drag which serves to retard the forward motion of the sweat-band and enables the wheels to stretch the bent edge of the same to the desired extent; also, in the combination, with the shaft which carries the upper wheel, and with a spring which serves to press said wheel against the lower wheel in a direction parallel to its shaft, of an arm which is firmly secured to the shaft of the upper wheel, and which acts on the drag, so that in forcing the upper wheel outward against the action of its spring the drag is also forced outward; further, in the combination, with the upper wheel, the drag, and the springs which act on the same, of a lever adapted to force the upper wheel and the drag outward against the action of their springs, for the purpose of facilitating the introduction of the sweat-bands; also, in the combination, with the two wheels and the spring which acts on the upper wheel, of a lever adapted to force said upper wheel outward against the action

of its spring to facilitate the introduction of the sweat-bands between the two wheels.

In the drawings, the letter A designates the frame of my machine; and B C are two shafts, which have their bearings in said frame, and on which are mounted the bending-wheels D E. The faces of these wheels are so shaped that the bent edge of a sweat-band can be brought between them—that is to say, they are each provided with a shoulder,  $c$ —and the wheels are geared together by cog-wheels F G, or other suitable means, in such a manner that one revolves at a different surface-speed from the other. By this arrangement of the wheels D E they are caused to stretch or lengthen the bent edge of the sweat-band as it is passed between them, and by this action on the edge of the band it becomes permanently bent at a right angle or less to the face of the band. The angle to which the edge of the sweat-band is brought is determined by the angle of the shoulders  $c$ , and can obviously be varied.

The letters H I designate two springs acting on the shaft B of the upper bending-wheel. The spring H serves to force the shaft B downward, and by these means the faces of the wheels D E are compressed in a direction at right angles to their shafts, while the spring I serves to force the shafts lengthwise, whereby the faces of the wheels are pressed together in a direction parallel to their shafts. The spring H bears upon a box, J, which forms the bearing for the shaft D, and it is inclosed by a sleeve, K, which is secured to the frame A, and with which is preferably combined the set-screw L, for regulating the tension of the spring.

The spring I is coiled on the shaft B and bears at one end on the box J, while its other end acts on the collar  $b$ , secured to the shaft B.

For the purpose of guiding the sweat-band to the wheels D E, I attach to the frame A a band-guide, N, and on the shaft B is firmly secured an arm, O, which bears against a rod, P, to the outer end of which is secured the drag Q. This drag serves to press the bent edge of the sweat-band against a shoulder,  $d$ , on the band-guide N, being forced toward the shoulder by a spring,  $e$ , coiled around the rod P.

In the example shown in the drawings the drag slides in a suitable guideway formed in

the body of the band-guide; but it can be applied in any suitable manner.

With the shaft B is combined a lever, R, by means of which said shaft, together with the upper wheel, D, and the drag Q, can be forced outward against the action of the springs I e, for the purpose of facilitating the introduction of the sweat-bands. By the action of the drag the forward motion of the sweat-band is retarded, and as the wheels D E are caused to revolve the bent edge of the sweat-band is stretched to the desired extent. The tension of the spring e can be regulated by a nut, f, so that the pressure of the drag on the bent edge of the sweat-band can be increased or decreased, as may be desired.

The guide-frame of the drag Q is provided with a projection, g, Fig. 3, which extends over the rim or shoulder c of the lower wheel, E, and prevents the sweat-band from running out over this shoulder. This projection is of great importance to insure a correct operation of my machine.

I do not claim in this application anything shown and described in my Patent No. 210,985, of December 17, 1878.

I do not claim the extension projecting over the shoulder of the lower wheel.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with two wheels which are adapted to receive the bent edge of a sweat-

band between them and to stretch the same, of a drag which serves to retard the forward motion of the sweat-band and enables the wheels to stretch the bent edge of the same to the desired extent, substantially as shown and described.

2. The combination, with the shaft which carries the wheel and with a spring which serves to press said wheel against the lower wheel in a direction parallel to its shaft, of an arm which is firmly secured to the shaft of the upper wheel and which carries the drag Q, substantially as and for the purpose set forth.

3. The combination, with the wheel, the drag, and the springs which act on the same, of a lever adapted to force the upper wheel and the drag outward against the action of their springs, substantially as and for the purpose described.

4. The combination, with the two wheels and with the spring which acts on the upper wheel, of a lever adapted to force said upper wheel outward against the action of its spring, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 30th day of June, 1879.

T. W. BRACHER. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.